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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* YOSHIYUKI AKIYAMA, TOSHIMI NAKASHIMA,  
YOSHIAKI MATSUMOTO, TADAYUKI YAMADA, and  
HISAYOSHI TANAHASHI

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Appeal 2010-000595  
Application 10/757,413  
Technology Center 1700

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Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and  
RAE LYNN P. GUEST, *Administrative Patent Judges*.

GUEST, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1, 3-7, and 9-14. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE and ENTER NEW GROUNDS OF REJECTION.

Appellants' invention relates to a waveform monitoring apparatus which is combined with an injection molding device to determine the

conformity/nonconformity of a molded product based on the pressure data of a hydraulic cylinder and a method for monitoring a waveform (Spec. 1:6-9). In particular, a displayed measured value waveform is given a marking when the pressure data of the hydraulic cylinder has exceeded the reference pressure waveform by a predetermined range (Spec. 3:23-25). Claims 1 and 7 are illustrative:

1. A waveform monitoring apparatus, comprising:

a hydraulic cylinder, incorporated in an injection molding device for ejecting a molding material;

a sensor, generating pressure data of the hydraulic cylinder;

a determinant, forming a measured value waveform based on the pressure data, and determining whether the pressure data exceeds a reference pressure waveform by a predetermined range;

a marking applier, applying a marking to an excess portion of the measured value waveform determined by the determinant; and

a display for displaying the measured value waveform having the excess portion to which the marking is applied,

wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure.

7. A method for monitoring a waveform, comprising the steps of: generating pressure data of a hydraulic cylinder incorporated in an injection molding device for ejecting a molding material;

forming a measured value waveform based on the pressure data;

determining whether the pressure data exceeds a reference pressure waveform by a predetermined range;

applying a marking to an excess portion of the measured value waveform determined in the determinant step; and

displaying the measured value waveform having the excess portion to which the marking is applied,

wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure.

The Examiner relies upon the following evidence:

<u>First Named Inventor</u>	<u>Document No.</u>	<u>Issue or Pub. Date</u>
Inden	US 4,905,165	Feb. 27, 1990
Neko	EP 0 418 398 A1	Mar. 27, 1991
Moriwaki <sup>1</sup>	JP 07-205244	Aug. 8, 1995
Sekido <sup>2</sup>	JP 07-290548	Nov. 7, 1995
Moriwaki <sup>3</sup>	JP 2001-287254 A	Oct. 16, 2001

Okabe, et al.,<sup>4</sup> “How to make figures and presentations that are friendly to color blind people,” publication of Colorblind Barrier Free, retrieved from the internet URL:<http://jfly.iam.u-tokyo.ac.jp/color/> on Nov. 27, 2007, last updated Nov. 20, 2002, pp. 1-19.

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<sup>1</sup> We refer to “Moriwaki ‘244” herein. The Examiner references an English language Abstract provided to Appellants with the Japanese reference in an Office Communication dated Jan. 15, 2004.

<sup>2</sup> The Examiner references an English language Abstract provided to Appellants with the Japanese reference in an Office Communication dated Sep. 25, 2007.

<sup>3</sup> We refer to “Moriwaki ‘254” herein. The Examiner references an English language Abstract and an English language computer translation provided to Appellants with the Japanese reference in an Office Communication dated Nov. 22, 2006.

<sup>4</sup> Adopting the nomenclature of Appellants, we refer to “Colorblind” herein.

The Examiner maintains, and Appellants seek review of, the following rejections:

1. The rejection of claims 1, 3, 5-7, 9, and 11-14 under 35 U.S.C. § 103(a) as unpatentable over (a) Moriwaki '244 in view of Sekido; (b) Morikawa; (c) Moriwaki '244 in view of Sekido, Inden, and Colorblind; and (d) Morikawa in view of Inden and Colorblind;
2. The rejection of claims 1, 3-7, and 9-14 under 35 U.S.C. § 103(a) as unpatentable over (a) Neko; (b) Moriwaki '254 in view of Neko; (c) Neko in view of Inden and Colorblind; and (d) Moriwaki '254 in view of Neko, Inden, and Colorblind;
3. The rejection of claims 4 and 10 under 35 U.S.C. § 103(a) as unpatentable over (a) Moriwaki '244 in view of Sekido or Morikawa further in view of Neko; (b) Moriwaki '244 or Morikawa in view of Inden and Colorblind.

Although Appellants clearly indicate that claims 1, 3-7, and 9-14 stand rejected and are being appealed (Br. 2), Appellants assert that “[n]one of dependent claims 3-6 and 9-14 is argued separately” (Br. 3).<sup>5</sup> We decide this Appeal on the basis of independent claims 1 and 7.

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<sup>5</sup> The Examiner interprets Appellants’ failure to specifically recite the separate rejections of claims 4 and 10 as a statement that the rejections of claims 4 and 10 are “not under review on appeal because they have not been presented for review in the Appellants’ brief” (Ans. 2). We disagree and consider the separate rejections of claims 4 and 10 to the extent that Appellants present no separate issues for our review over those arguments presented for claims 1 and 7.

## II. THE EXAMINER'S OBVIOUSNESS REJECTIONS UNDER 35 U.S.C. § 103(a)

For the reasons set forth below, claim 1 is indefinite under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, due to the recitation in independent claim 1 of “a determinant, forming a measured value waveform based on the pressure data, and determining whether the pressure data exceeds a reference pressure waveform by a predetermined range” and of “a marking applier, applying a marking to an excess portion of the measured value waveform determined by the determinant” as separate components. Claim 7 is indefinite under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, due to the recitation in independent claim 7 of “applying a marking to an excess portion of the measured value waveform determined in the determinant step” and “displaying the measured value waveform having the excess portion to which the marking is applied” as separate steps.

Therefore, we are unable to determine the propriety of the Examiner's §103(a) rejections. To do so would of necessity require speculation with regard to the metes and bounds of the claimed subject matter. *In re Wilson*, 424, F.2d 1382, 1385 (CCPA 1970); *In re Steele*, 305 F.2d 859, 862 (CCPA 1962). Accordingly, we procedurally reverse the Examiner's § 103(a) rejections, and we enter a new ground of rejection against these appealed claims as shown below.

## III. THE NEW GROUNDS OF REJECTION

### A. REJECTIONS UNDER § 112, 2nd paragraph

We reject claims 1, 3-7, and 9-14 under 35 U.S.C. § 112, 2nd paragraph, for failing to particularly point out and distinctly claim the subject matter which Appellants regard as their invention.

*Claim 1*

Independent claim 1 is an apparatus claim directed to a waveform monitoring apparatus (*see* claim 1). Claim 1 recites “a determinant, forming a measured value waveform based on the pressure data, and determining whether the pressure data exceeds a reference pressure waveform by a predetermined range” and “a marking applier, applying a marking to an excess portion of the measured value waveform determined by the determinant” (claim 1).

Regarding the “determinant” limitation of claim 1, Appellants cite to “e.g., Fig. 1, including exemplary determination unit 11 and its process section 13; and from p. 8, line 14, to p. 10, line 1” for support (Br. 2). Regarding the “marking applier” limitation of claim 1, Appellants cite to “e.g., Figs. 1-3, including exemplary markings 25 determined by process section 13; from p. 9, line 3, to p. 10, line 18; and from p. 12, line 3, to p. 13, line 6” for support (Br. 3).

The cited portion of the Specification does not use either the terms “determinant” or “marking applier” (*see* Spec. 8:14-13:6). Rather, the portions of Appellants’ Specification cited by Appellants, in particular, describe that process section 13 includes a microcomputer (Spec. 8:19-20) that creates a sampling waveform from pressure data (Spec. 8:20-23), creates upper and lower value waveforms (Spec. 8:23-9:2), creates a measured value waveform (Spec. 9:3-6) and calculates whether the deviation of the measured value waveform from the sampling waveform exceeds the upper limit value waveform (Spec. 9:6-9). If the upper limit is exceeded, process section 13 “applies an upper limit value error signal to the measured

value waveform so that the measured value data signal is displayed as a thick line” (Spec. 9:14-16).

Appellants’ Specification describes that “[t]he sampling data signal, the upper limit value data signal, the lower limit value data signal, the measured value data signal, the upper limit value error signal, and the lower limit value error signal are transferred to the display 14” (Spec. 9:23-10:1) and “[t]he display 14 performs waveform conversion” of the transferred signals in order to display the sampling and measured value waveform with the measured value waveform having a thick line where the upper limit value is exceeded (Spec. 10:2-10). According to the Specification “[t]he simple waveform monitoring apparatus 10 according to the embodiment can display a measured value waveform in a thick line” (Spec. 12:24-25).

During examination, “claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (*quoting In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990)).

We recognize that the “determinant” and “marking applier” limitations are not recited in “means for . . .” language, such that 35 U.S.C. § 112, sixth paragraph, is presumptively invoked. Nonetheless, we determine that the above claim recitations invoke paragraph 6 of § 112. The record does not reflect that the claim terms “determinant” and “marking applier” are understood in the art to denote a particular structure or class of structures. As a consequence, we consider these claim terms to be nonce words or verbal constructs which are simply a substitute for the term



“means” of § 112, paragraph 6. Specifically, the term “determinant” is no more than a verbal construct for the phrase “means for determining” and the phrase “marking applier” is no more than a verbal construct for the phrase “means for applying a marking.” See *Lightning World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1360 (Fed. Cir. 2004); *Ex parte Rodriguez*, 92 USPQ2d 1395, 1404-05 (BPAI 2009).

We have thoroughly reviewed the Appellants’ Specification and have not been able to locate an adequate disclosure of structure or algorithms corresponding to the specific functions of the “determinant” or the “marking applier” as recited in claim 1. The only structure associated with these separate functions is a single process section 13 (microcomputer).<sup>6</sup> Simply reciting a “process section” without providing some detail about the means to accomplish the function is not enough to satisfy either paragraph 6 or paragraph 2 of § 112. An applicant is not permitted to capture every possible means to perform a function by using purely functional claim language. *BlackBoard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009); see also *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340-41 (Fed. Cir. 2009); *Aristocrat Techs. Austl. Pty v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (“For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming. Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a

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<sup>6</sup> A display 14 is a separately recited component of the waveform monitoring apparatus of claim 1.

particular function does not limit the scope of the claim to ‘the corresponding structure, material, or acts’ that perform the function, as required by section 112 paragraph 6.”).

Under these circumstances, the record supports a determination that Appellants have failed to disclose an algorithm, and thus have failed to adequately describe sufficient structure, for performing the function required by the claim 1 recitation under review. As a result of Appellants’ failure, the meaning and scope of this recitation cannot be construed. For this reason, claim 1 as well as the claims that depend therefrom are indefinite, thereby violating the 2nd paragraph of § 112. *See In re Katz*, 97 USPQ2d 1737, 1746-47 (Fed. Cir. 2011); *Ex Parte Rodriguez*, 92 USPQ2d 1395, 1405-06 (BPAI 2008).

#### *Claim 7*

Independent claim 7 is a method claim directed to a method for monitoring a waveform (*see* claim 7). Claim 7 recites “applying a marking to an excess portion of the measured value waveform determined in the determinant step” “displaying the measured value waveform having the excess portion to which the marking is applied,” and “wherein the marking is thicker than other portions of the measured value waveform that do not exceed the reference pressure” (claim 7).

Regarding the “applying” limitation of claim 7, Appellants cite to “e.g., Figs. 1-3, including exemplary markings 25 determined by process section 13; p. 6, lines 10-14; from p. 9, line 3, to p. 10, line 18; and from p. 12, line 3, to p. 13, line 6” for support (Br. 3). Regarding the “displaying” limitation of claim 7, Appellants cite to “e.g., Figs. 1-3, including exemplary

display 14 and markings 25; p. 6, lines 12-14; p. 10, lines 2-18; and from p. 12, line 3, to p. 13, line 6” for support (Br. 3).

The section of Appellants’ Specification cited by Appellants generally describes that “[t]he sampling data signal, the upper limit value data signal, the lower limit value data signal, the measured value data signal, the upper limit value error signal, and the lower limit value error signal are transferred to the display 14” (Spec. 9:23-10:1) and “[t]he display 14 performs waveform conversion” of the transferred signals in order to display the sampling and measured value waveforms with the measured value waveform having a thick line where the upper limit value is exceeded (Spec. 10:2-10).

Appellants specifically indicate that process section 13 produces an upper limit value error *signal* which is transferred to the display 14. The display then converts the signal to a visually displayed waveform having the appropriate marking 25. The marking 25 disclosed by Appellants and recited in claim 7 is a visual indicia (specifically, a thicker line) appearing as part of the measured value waveform on the display. Accordingly, claim 7 having separate steps of applying a marking to a waveform and displaying a waveform having the marking applied is indefinite because Appellants’ Specification does not clearly and effectively demonstrate any distinction between these two process steps. For this reason, claim 7 and the claims that depend therefrom fail to particularly point out and distinctly claim the subject matter which Appellants regard as their invention, in violation of § 112, second paragraph.

B. REJECTIONS UNDER § 112, 1<sup>st</sup> paragraph

*Claim 1*

As an initial matter, we clarify that the following rejections are appropriate regardless of whether or not claim 1 is considered to invoke paragraph 6 of § 112. We reject claim 1 and claims 3-6, 12, and 13, which depend therefrom, under the 1st paragraph of 35 U.S.C. § 112 for failing to comply with the written description requirement of this paragraph.

As explained above, Appellants' Specification fails to disclose any algorithm by which the disclosed "process section" would be able to perform the specific functions of the "determinant" or the "marking applier" as recited in claim 1. Yet, claim 1 generically encompasses all means for performing this function. These circumstances violate the written description requirement.

The test for compliance with this requirement is whether the application disclosure reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the application filing date. *See Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). The problem of written description compliance is especially acute with genus claims that use functional language to define the boundaries of a claimed genus, even when such claims are original claims and thus part of the original specification. *Id.* at 1349. Compliance with the written description requirement ensures that when an inventor claims a genus by its function, the specification recites sufficient structures and materials to accomplish that function. *Id.* at 1352-53.

Here, independent claim 1 (and concomitantly the claims that depend therefrom) encompasses all means for performing the function under

consideration whereas the Specification describes no algorithm by which to accomplish that function. These circumstances compel a determination that the Specification disclosure would not reasonably convey to those skilled in the art that Appellants possessed on their application filing date the full scope of the invention defined by independent claim 1 and the dependent claims. *See ICU Med., Inc. v. Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1378 (Fed. Cir. 2009); *see also LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005). This determination is appropriate regardless of whether claim 1 is an original claim and therefore part of the original disclosure. *See id.* at 1346-47.

We also reject claim 1 and claims 3-6, 12, and 13, which depend therefrom, under the 1st paragraph of 35 U.S.C. § 112 for failing to comply with the enablement requirement of this paragraph.

The enablement requirement is violated by independent claim 1 (as well as the dependent claims) for reasons analogous to those discussed above with respect to violation of the written description requirement. *See LizardTech*, 424 F.3d at 1345 (“Whether the flaw in the specification is regarded as a failure to demonstrate that the [inventor] possessed the full scope of the invention recited in claim 21 or a failure to enable the full breadth of that claim, the specification provides inadequate support for the claim under section 112, paragraph one.”). Specifically, claim 1 fails to comply with the enablement requirement because it is generic to all means for performing the claimed function while the Specification fails to describe any algorithm which would enable performance of that function.

It is well settled that “the specification must teach those of skill in the art ‘how to make and how to use the invention as broadly as it is claimed.’” *In re Goodman*, 11 F.3d 1046, 1050 (Fed. Cir. 1993).

This legal principle leads to a determination that the appealed claims do not comply with the enablement requirement because the functional language of claim 1 (and correspondingly the dependent claims) is not enabled to its entire scope. *See Rodriguez*, 92 USPQ2d at 1410-11; *Ex Parte Miyazaki*, 89 USPQ2d 1207 (BPAI 2008).

*Claim 7*

We also reject claim 7 and claims 9-11 and 14, which depend therefrom, under the 1st paragraph of 35 U.S.C. § 112 for failing to comply with the enablement requirement of this paragraph.

“The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation.” *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2004).

As discussed above, Appellants’ Specification discloses that the display 14 converts the measured value waveform *signal* and the upper limit value error *signal* to a visually displayed waveform having the appropriate marking 25. Thus, claim 7 fails to comply with the enablement requirement because the Specification would not enable one skilled in the art to practice a process having two separate steps of applying a marking to a waveform and displaying a waveform having the marking. Appellants’ Specification does not clearly and effectively demonstrate any distinction between these two process steps.

#### IV. CONCLUSION

We reverse the Examiner's decision to reject claims 1, 3-7, and 9-14 under 35 U.S.C. § 103(a), and we enter the following new grounds of rejection for claims 1, 3-7, and 9-14:

1. Claims 1, 3-7, 9-14 are rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention;
2. Claims 1, 3-6, 12 and 13 are rejected under 35 U.S.C. §112, first paragraph, for failure to comply with the written description requirement and for lack of enablement; and
3. Claims 7, 9-11 and 14 are rejected under 35 U.S.C. §112, first paragraph, for lack of enablement.

#### VI. PROCEDURAL MATTERS

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b). This regulation provides that “[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review.”

37 C.F.R. § 41.50(b) also provides that the Appellants, WITHIN TWO MOTNHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal as to the rejected claims:

- (1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner....

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record....

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

REVERSED

37 C.F.R § 41.50(b)

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